

REMARKS

This case has been carefully reviewed and analyzed in view of the Office Action dated 2 January 2003. Responsive to the rejections made by the Examiner in that Office Action, Claims 1-5 as originally filed are now canceled from this case, and Claims 6-12 are inserted for further prosecution. It is believed that with such insertion of Claims, there is a further clarification of Applicant's invention for this Patent Application.

In the Office Action, the Examiner rejected Claims 1-5 under both the first and second paragraphs of 35 U.S.C. § 112. More specifically, the Examiner found objectionable the concurrent reference to both CCD and CMOS image sensors. As mentioned, Claims 1-5 are now canceled from this case. It is believed that newly-inserted Claims 6-12 now obviate the Examiner's formal concerns under both the first and second paragraphs of 35 U.S.C. § 112.

The Examiner also rejected Claims 1-5 under 35 U.S.C. § 103(a) as being unpatentable over the Danna, et al. reference in view of the Tabata, et al. reference. In setting forth this rejection, the Examiner correlated a number of features disclosed by Danna, et al. with Applicant's claimed features. The Examiner correlated, among others, Danna, et al.'s image sensor housing 27 with Applicant's lens seat, concluding that this image sensor housing 27 is disposed on an upper edge of a package of the solid state sensor 25.

Applicant's image pickup module is one in which the optical alignment of its lens

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and image sensing device is simply yet very effectively brought about. As newly-inserted independent Claim 6 now more clearly recites, Applicant's image pickup module includes among its features an image sensor in which "a coupling transistor device [is] disposed within a housing package having a peripheral portion," and "a lens seat disposed on said image sensor," formed with a "connecting section" that directly "engag[es] said peripheral portion of said image sensor housing package to be guided thereby into an aligned position." A lens coupled to the lens seat is thus maintained with its "axis aligned in predetermined manner relative to...[a] coupling transistor device" held within the housing package "when said connecting section of said lens seat is disposed in said aligned position."

The cited references plainly fail to disclose such combination of features. Note in this regard that the image sensor housing 27 of the Danna, et al. device nowhere even contacts any portion of the housing package for the solid state sensor 25 itself. In fact, the reference specifically prescribes the casting during device assembly of an optically clear resin over and about the sensor 25 package (and surrounding components) to form a protective coating 67. This resin coating 67 serves as a buffer between the image sensor housing 27 and sensor 25 package, keeping them from direct engagement. Danna, et al. thus teaches quite plainly away from Applicant's lens seat whose "connecting section engag[es] said peripheral portion of said image sensor housing package to be guided thereby into an aligned position," as newly-inserted independent Claim 6 now more clearly recites.

Among other things, the engagement of Danna, et al.'s image sensor housing 27 with the resin coating 67 cast generally over the sensor 25 package and its surrounding components would, in practice, fail to provide the degree of precision in optical alignment which Applicant's claimed image pickup module provides. Note in this regard that the underlying purpose of Danna, et al.'s assembly structure is to ensure a hermetic seal, so that a "gas tight chamber 71 is...established" to be "filled with an inert gas, such as nitrogen," (Column 5; lines 30-33). Removing the protective shield 67 and reconfiguring to effect a direct engagement between the inner portion surfaces of the image sensor housing 27 and the sensor 25 package would, without significant additional modifications, seriously threaten to compromise the seal for this air tight chamber 71. Clearly, Danna, et al. discourages such significant and deviant variation from its prescribed structure.

The Examiner secondarily cited the Tabata, et al. reference simply for its disclosure of a CMOS type image sensing device. Given such contrary teachings of Danna, et al., the reference is found to be quite ineffectual to the present patentability analysis.

It is respectfully submitted, therefore, that the cited Danna, et al. and Tabata, et al. references, even when considered together, fail to disclose the unique combination of elements now more clearly recited by Applicant's pending Claims for the purposes and objectives disclosed in the subject Patent Application.

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It is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

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Dated: 3/25/2013

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